



June 22, 2016

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20054

Via Electronic Filing

Re: In the Matter of AT&T Mobility Spectrum LLC; BellSouth Mobile Data, Inc.; New Cingular Wireless PCS, LLC; and SBC Telecom, Inc. Petition for Limited Waiver of Interim Performance Requirement for 2.3 GHz WCS C and D Block Licenses,
WT Docket No. 16-181

Dear Ms. Dortch,

I¹ offer these comments in support of petitioner's request for a limited waiver of the interim performance requirement for 2.3 GHz WCS C and D block licenses.

Ownership of the WCS C and D block licenses will revert to the Commission on March 13, 2017 unless the waiver is granted. If this happens, the Commission will be doomed to repeat the process of auctioning the licenses and waiting for a bidder to come along with a new application ready to go. Because of the nature of these licenses, there may not even be a new bidder ready to engage in this inherently risky proposition.

As we learned from the LightSquared matter, the timeline for deploying new terrestrial wireless systems with satellite-based neighbors can be protracted. In that matter, the license holder was unable to satisfy the Commission's interference concerns before running out of money and being forced to declare bankruptcy. LightSquared is no longer in business and their spectrum is unused. We don't want this history to repeat itself.

These spectrum blocks are challenging because they border the SiriusXM Satellite Digital Audio Radio Service ("SDARS") and the Aeronautical Mobile Telemetry ("AMT") allocation assigned to the Aerospace and Flight Test Radio Coordinating Council, Inc. ("AFTRCC".)

¹ I am an independent network engineering consultant and policy analyst, presently working at High Tech Forum as editor and founder and at the American Enterprise Institute as a Visiting Scholar. These remarks are offered in my personal capacity and do not necessarily represent the opinions of AEI or any client or sponsor. I have previously offered comments in the "Preserving the Open Internet" and "Broadband Industry Practices" dockets, GN 09-191 and WC 07-52 respectively, as well as the LightSquared matter and a number of other proceedings. I also offered testimony at the [FCC En Banc Public Hearing on Broadband Network Management Practices in Cambridge on February 25, 2008](http://www.fcc.gov/record/2008/02/25/fcc-en-banc-public-hearing-on-broadband-network-management-practices-in-cambridge-on-february-25-2008) as an invited technical expert. My CV is available at <http://www.bennett.com/resume.pdf>.

It's extremely difficult to stand up a terrestrial mobile service next door to these sensitive systems because of stark differences in power levels and propagation patterns.

In essence, development of a compliant WCS C & D block system requires careful engineering, development of new technology, and a business model that can justify the risk of investing in the technology.

After much research and travail, petitioner believes it has found an application – LTE smart grid support – and is in the process of testing and trialing with prospective customers and a technology partner, Nokia. Initial test results suggest that the smart grid system is viable, hence petitioner asks for more time to continue lab and field trials to confirm viability. This approach appears to be rational and responsible as well as more viable than the other nine systems petitioner has considered.²

Ideally, petitioner should be further along, but the challenging nature of the C & D blocks makes application development more challenging than it would be in the circumstance where neighbors were terrestrial systems. Insofar as the application has merit and petitioner is making reasonable progress, it's advantageous to allow the experiment to continue.

It's important to note that petitioner does not seek any change in the technical rules governing these spectrum licenses, nor does it seek to bypass timelines altogether. It simply seeks more time to meet the build out requirement. As long as testing continues to make progress and there's a light at the end of the tunnel the public interest would be well served by the waiver. It's also noteworthy that the neighbors don't object the current plan.

My best understanding of the current plan proposes to mitigate interference potential by a number of clever means: exclusion zones, short transmission durations; spatial separation of antennae; and careful modulation. These features, in combination, support a national priority, the Smart Grid, which will undoubtedly prove beneficial to the public by conserving power, balancing loads across the grid, and improving reliability

Just as the Smart Grid is an advance over the traditional grid, the technical means petitioner has developed for its support represent an advance in the coexistence of terrestrial wireless systems with satellite-based ones. In the wake of Telstar, the nation's spectrum regulators were overly enthusiastic about the potential of satellite systems and under-appreciative of the potential of terrestrial wireless systems to improve the way we communicate.

The net result of that incorrect assessment (which appeared reasonable at the time) is that

² According to petitioner's waiver request, these include fixed wireless local loop service; reconfiguring the 2.3 GHz band; low-power network overlay used for communication among Internet of Things-type devices; additional CMRS network capacity in indoor spaces like arenas or convention centers; supplemental downlink; LTE direct; air-to-ground service; wireless backhaul; and mobile broadband as part of AT&T's CMRS network. None of these options appears viable.

we need to re-assign a number of satellite spectrum allocations to terrestrial use. Reassignment is a multi-step process in which the first step is the hardest. Petitioner proposes a low bandwidth system in the WCS C & D blocks because it cannot interfere with SiriusXM and AMT. If it comes to pass that the satellite and aeronautical systems are reassigned to terrestrial networks, it will become possible to increase the bandwidth of the system using the C & D blocks, but such an eventuality is not on the horizon at the moment. In any case, as long as we have terrestrial networks operating below sensitive space-based systems some compromises will be necessary.

The proposed application, the Smart Grid, is a light consumer of transmission opportunities that knits together sensors and controllers in fixed (or at least “known”) locations. The proposed equipment will use LTE and an IP/multiple protocol label switching (“MPLS”) transport network. The equipment will be able to switch between the C & D blocks and petitioner’s commercial network, providing both fallback and resiliency. Thus the application can continue to function even if an impediment is found in the WCS spectrum. Petitioner has customers lined up and is actively seeking more.

Per petitioner’s May 18, 2016 Supplement, it believes it needs no more than a two year extension of the final deadline; it proposes September 13, 2021 rather than the current final performance requirement deadline of September 13, 2019. In addition, petitioner promises to deliver semiannual progress reports. This request appears reasonable, is consistent with technical facts, and offers public benefit; in the absence of opposition by the spectrum neighbors there is no downside to granting it.

Respectfully submitted,

/s/ Richard Bennett

Richard Bennett
Founder and Publisher
High Tech Forum
HighTechForum.org
Lakewood, Colorado

June 21, 2016

cc: Chairman Tom Wheeler
Commissioner Mignon Clyburn
Commissioner Jessica Rosenworcel
Commissioner Ajit Pai
Commissioner Mike O’Rielly
Julius Knapp, Chief, Office of Engineering & Technology
Scott Jordan, Chief Technologist